

DUAL BRIDGE MATRIX CONVERTER

ABSTRACT

A dual bridge matrix converter has a line-side converter with controllable switches that receives AC power and provides unidirectional
5 power to high and low DC link lines, and a load-side converter which receives the power from the DC link lines and provides AC power to output lines. A clamp circuit is connected across the DC link lines and includes a series connected diode and a capacitor. Negative DC link current will be conducted through the clamp diode to charge the clamp
10 capacitor to avoid voltage spikes on the DC link lines. A controllable switch may be connected in parallel with the clamp diode and is turned on when the voltage across the clamp capacitor is above a threshold that is greater than the normal peak-to-peak AC input voltage. The switch is turned off when the voltage across the clamp capacitor is lower than the
15 threshold voltage.